

Perfect Solution for Electrical Earthing High Quality Backfill Material for Earthing

WHAT IS BENTOEARTH ?

It is a type of clay consisting predominantly of SMECTITE minerals, usually MONTMORILLONITE. The primary constituent of this clay is Hydrated Aluminum Silicate.

APPLICATION

BENTOEARTH provides an effective solution for Electrical Earthing / Grounding where certain soil conditions make it difficult to obtain a reliable earth resistance, whilst particular installations may require a very low Earthing Resistance values.

WHY BENTOEARTH IS A PERFECT SOLUTION FOR ELECTRICAL EARTHING

BENTOEARTH is a Moisture Retaining Clay of very Low Soil Resistivity and when mixed with water, it is very effectively used as an EARTHING BACKFILL MATERIAL. BENTOEARTH's low soil resistivity and the ability to hold it's moisture content for a considerable period of time & also its ability to absorb moisture from the surrounding soil enables it to lower the resistance-to-ground values of an Earthing System quite considerably and this is why it is considered to be a PERFECT SOLUTION for Electrical Earthing.

HOW IT WORKS ?

Conduction in BENTOEARTH, takes place via the movement of ions in moist muddy paste of clay. BENTOEARTH has a pH in the range of 7.5 to 9.0 and at pH of 8.0, it has fully charged anions, capable of exchanging all its cations, this condition is called 100% Base Saturation and no further alkalinity is needed to activate this clay any further. BENTOEARTH with 7.5 to 9.0 pH with 90 to 100% Base Saturation is a High Quality Conductive Earthing Backfill Material.

BENTOEARTH IS A CERTIFIED ECO-FRIENDLY PRODUCT

BENTOEARTH is Naturally Occurring Hydrated Aluminum Silicate, which is 100% Eco-friendly and doesn't harm the soil or surrounding vegetation & plantation or underground water reservoirs.

BENTOEARTH CONFORMS TO IEC 62561-7 STANDARD

BENTOEARTH has a low resistivity in the range of average 0.8 Ω -m and does not cause any type of corrosion to Cu-Rods & Cu-Conductors or any Metallic Earthing System and conforms to IEC 62561-7 (International Electrotechnical Commission), a Benchmark for Low Resistivity & Corrosion Protection Performance of Ground / Earth Conductivity Enhancing Material



METHOD OF APPLICATION

Preparation of Slurry is the most important aspect for getting the best result. The slurry is prepared in the following Proportion (BENTOEARTH: Water Ratio)

- ✓ For areas that receive good annual rainfall, the mixing ratio is 1:1, i.e. for each bag BENTOEARTH (25 Kg), mix 25 Liters of water.
- ✓ For dry areas that does not receive good annual rainfall, the water part in the slurry is increased to 1.4 - 1.5 times i.e. for each bag of BENTOEARTH (25 Kg), mix around 35-38 Liters of water depending upon the severity of dryness.

The above ratio shall be maintained for the entire requirement of the treatment volume. Mixing BENTOEARTH with water properly to make homogenous & swelling thick slurry is EXTREMELY important in achieving the required results from the product.

In case of deep bore hole grounding, some margins should be kept in the above water mixing ratios to avoid excess water quantity in thick slurry, as remixing of water is additionally required during the pouring of slurry into the borehole i.e. pouring the water with pressure into the borehole simultaneously with the thick slurry is necessary to avoid BENTOEARTH choking inside the deep boreholes. This is to avoid air gaps along the length of vertical earthing electrodes and to fill the deep boreholes completely from top to bottom with BENTOEARTH. Care should be taken not to use too much of water as to fill the whole borehole with water itself.

Before pouring BENTOEARTH slurry into boreholes in dry-rocky areas, where the boreholes do not collapse easily, the filling of dry boreholes completely with standing water for a day or two until the water is absorbed completely into it, helps in getting very results.

BENTOEARTH (BACKFILL) QUANTITY CALCULATION

The number of BENTOEARTH bags (25 Kg each) required to fill a giveng Bore Hole can be calculated by the following equation

$$\text{Number of BENTOEARTH bags} = 27 \times D^2 \times L$$

L = Depth of Earthing Bore Hole (in Meters)

D = Diameter of Earthing Bore Hole (in Meters)

Example : For a 10 Feet Deep & 6 Inch Dia Earthing Bore Hole

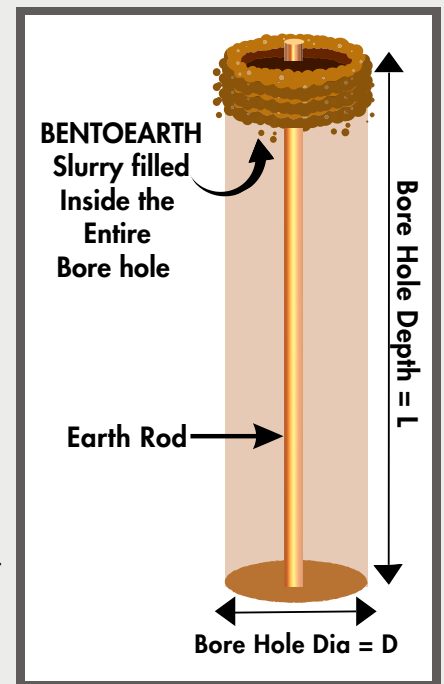
L = 10 ft / 3.28 = 3.05 m & D = 6 in x 0.0254 = 0.1524 m

No. of BENTOEARTH bags = $27 \times (0.1524)^2 \times 3.05 = 1.912 \approx 2$ Bags

We recommend 6" dia bore hole as this gives enough low resistivity material (BENTOEARTH) to suaround the earth rod & gives good result

THUMB-RULE : 5' Deep & 6" Dia Bore needs 1 Bag of BENTOEARTH

Similarly **10' Deep & 6" Dia Bore needs 2 Bags of BENTOEARTH**



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